

WHAT IS CLAIMED IS:

1. A process for selective removal of a nickel alloy brazing composition from a nickel-base alloy component, comprising the steps of:

providing a brazed assembly comprising nickel-base alloy components joined by nickel alloy brazing composition;

immersing said assembly in an electrolyte; and

applying a potential across said electrolyte at a magnitude wherein said nickel-base alloy components are electrochemically passive and said nickel alloy brazing composition dissolves whereby said brazing composition is removed from said components.

2. The process of claim 1, wherein said electrolyte comprises a mineral acid solution.

3. The process of claim 2, wherein said mineral acid solution is a hydrochloric acid solution.

4. The process of claim 1, wherein said potential is greater than 0.0 and up to about 1.0 volts versus a Ag/AgCl reference electrode.

5. The process of claim 1, wherein said brazing composition has a lower melting point than said components.

6. The process of claim 1, wherein said brazing composition comprises nickel-chromium alloy brazing composition and wherein said components comprise nickel-chromium alloy components.

7. The process of claim 1, wherein said brazing composition has a composition as follows:

Cr: 7.0 % wt.

B : 3.10 % wt.

Si: 4.50 % wt.

Fe: 3.0 % wt.

C : 0.06 % wt. max

Ni: remainder.

8. The process of claim 7, wherein said nickel-base alloy components are provided from a material having a nominal composition as follows:

•	C	Mn	Si	S	Cr	Co	Nb+Ta	Ni	Cu	Ti	Al	Fe	-
Min	-	-	-	-	14.0	-	0.70	70.0	-	2.25	0.40	5.0	%
Max	0.80	1.00	0.50	0.01	17.0	1.0	1.20	-	0.50	2.75	1.00	9.0	%

9. The process of claim 1, wherein said nickel-base alloy components are provided from a material having a nominal composition as follows:

•	C	Mn	Si	S	Cr ✓	Co	Nb+Ta	Ni	Cu	Ti	Al	Fe	-
Min	-	-	-	-	14.0 ✓	-	0.70 ✓	70.0 ✓	-	2.25	0.40	5.0	%
Max	0.80	1.00	0.50	0.01	17.0	1.0	1.20	-	0.50	2.75	1.00	9.0	%

() 10. The process of claim 1, wherein said brazing composition is a nickel-chromium alloy containing boron, silicon and iron, and said nickel-base alloy components are provided of a nickel-chromium alloy containing iron, titanium, at least one of niobium and tantalum, and aluminum.